

BHARAT SCHOOL OF BANKING

SPEED AND TIME

1. Walking at $\frac{7}{8}$ th of his usual speed, a man reached his destination 16 minutes later than the time he usually takes to reach his destination. Find the usual time taken by him to reach his destination.

- (a) 1 hour, 44 minutes
- (b) 1 hour, 52 minutes
- (c) 1 hour, 36 minutes
- (d) 1 hour, 40 minutes

2. A person goes to office by train. He walks to the railway station closest to his home to catch the train. One day, he walked at 4 km/hr and missed the train by 5 minutes. The next day, he walked at 6 km/hr and reached the station 7 minutes before the arrival of the train. Find the distance between his home and the station.

- (a) 2.4 km
- (b) 1.8 km
- (c) 3.6 km
- (d) 3 km

3. Ashok covered a distance of 225 km as follows. He covered the first 15 km at 45 km/hr, the next 120 km at 60 km/hr and the remaining journey at 90 km/hr. Find his average speed for the journey of 225 km.

- (a) 65 km/hr
- (b) 67.5 km/hr
- (c) 70 km/hr
- (d) 73.5 km/hr

4. A person went from P to Q, at an average speed of a km/hr, from Q to R at an average speed of b km/hr, and from R to S at an average speed of c km/hr. If $PQ = QR = RS$, then the average speed of the person for traveling from P to S was

- (a) $(a + b + c) / 3$
- (b) $3abc / (ab + bc + ca)$
- (c) $3abc / (a + b + c)$
- (d) $3(ab + bc + ca) / (a + b + c)$

5. Car P starts from town X toward town Y. Car Q starts from Y towards X. Both the cars start simultaneously and travel their meet after journeys at uniform speeds. $XY = 200$ km. Both cars meet after 2 hours. If P and Q had travelled in the same direction both the cars would have met in 4 hours. Find the speed of P.

- (a) 60 kmph
- (b) 85 kmph

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- (c) 75 kmph
- (d) 80 kmph

6. Train P overtakes train Q double its length and travelling at half of speed of train P in 36 seconds. Train P crosses train R going in the opposite direction at double its speed in 8 seconds. If the speed of train P is 72 kmph then the length of train R is

- (a) 330 m
- (b) 360 m
- (c) 390 m
- (d) 420 m

7. A 480 m long train was travelling at 72 km/hr. It took 32 seconds to cross a cyclist travelling in the same direction as the train. Find the speed of the cyclist.

- (a) 12 km/ph
- (b) 15 km/ph
- (c) 18 km/ph
- (d) 9 km/ph

8. A train, 180m long, crossed a 120 m long platform in 20 seconds, and another train travelling at the same speed crossed an electric pole in 10 seconds. In how much time will they cross each other when they are travelling in the opposite direction.?

- (a) 11 sec
- (b). 13 sec
- (c) 12 sec
- (d) 14 sec

9. On a circular track, time taken by A and B to meet when travelling in the opposite directions is $\frac{1}{4}$ of time taken when they travel in the same direction. Find the ratio of their speeds?

- (a) 5 : 3
- (b) 6 : 5
- (c) 4 : 3
- (d) 3 : 2

10. How long will three persons starting at the same point and travelling at 4 km/hr, 6 km/hr and 8 km/hr around a circular track 2 km long take to meet at the starting point?

- (a) $\frac{1}{2}$ hr
- (b) 1hr
- (c) 1.5 hrs
- (d) 2 hrs

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Answers with Explanation

1. (b) Ratio

Speed 8 : 7

Time 7 : 8

1 = 16

7 = 7 X 16 = 112 min

= 1 hr 52 min

2. (a) Let $S_1 = 4$ kmph, $S_2 = 6$ kmph

Distance = $(S_1 \times S_2) / (S_1 - S_2) \times$ total time in hr

Distance = $(4 \times 6) / (6 - 4) \times (7+5)/60$

= $(4 \times 6)/2 \times 1/5 = 2.4$ km

3. (b) Average speed = Total distance / Total time

= $225 / (15/45 + 120/60 + 90/90) = 67.5$ km/h

4. (b) by above concept No. 6

5. (c) Let speed of car P = S_1

& speed of car Q = S_2

From 1st case:

$2S_1 + 2S_2 = 200$ - (i)

From 2nd case, When cars travelled in Same direction

$200 / (S_1 - S_2) = 4$

$4S_1 - 4S_2 = 200$ (ii)

From Equation (i) & (ii)

$S_1 = 75$ kmph

6. (b) For Train P

length = L, Speed = 72 kmph

For train Q

length = 2L, Speed = 36 kmph

$(L + 2L) / (72 - 36) \times 5/18$

L = 120 meter

For train R

Speed = 2 X 72 = 144 kmph

& length = x meter

$(120 + x) / (144 + 72) \times 5/18 = 8$

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$$x = 360 \text{ meter}$$

7. (c) Let speed of cyclist = x kmph

$$480/(72 - x) \times 5/18 = 32$$

$$x = 18 \text{ kmph}$$

8. (a) Let speed of 1st train = x kmph

$$(180 + 120)/(x \times 5/18) = 20$$

$$x = 54 \text{ kmph}$$

$$T/(54 \times 5/18) = 10, T = 150 \text{ meter}$$

$$\text{So, } (180 + 150) / (54 + 54) \times 5/18 = 11 \text{ sec}$$

9. (a) Let speed of A = x kmph

& speed of B = y kmph & $x > y$

When they are travelling in same direction, time taken be t

$$2\pi R / (x - y) = t \dots\dots\dots (i)$$

When they are travelling in opposite direction

$$2\pi R / (x + y) = t/4 \dots\dots\dots (ii)$$

From Eq (i) & (ii)

$$x + y / x - y = 4$$

By C & D

$$x/y = (4 + 1)/(4 - 1) = 5/3$$

$$x : y = 5 : 3$$

10. (b) Time taken for the three people meet in hours

$$= \text{LCM } (2/4, 2/6, 2/8) = 1 \text{ hours}$$